

GENERAL LIBRARY,

UNIV. OF MICHIGAN

MAR 10 1909

THE
AMERICAN MUSEUM
JOURNAL



Volume IX

March, 1909

Number 3

Published monthly from October to May inclusive by

THE AMERICAN MUSEUM OF NATURAL HISTORY

NEW YORK CITY

American Museum of Natural History
Seventy-seventh Street and Central Park West, New York City

BOARD OF TRUSTEES

First Vice-President
J. PIERPONT MORGAN
Treasurer
CHARLES LANIER

President
HENRY FAIRFIELD OSBORN

Second Vice-President
CLEVELAND H. DODGE
Secretary
J. HAMPDEN ROBB

Ex Officio

THE MAYOR OF THE CITY OF NEW YORK
THE COMPTROLLER OF THE CITY OF NEW YORK
THE PRESIDENT OF THE DEPARTMENT OF PARKS

Class of 1909

JOSEPH H. CHOATE

J. PIERPONT MORGAN

HENRY F. OSBORN

Class of 1910

J. HAMPDEN ROBB
ARTHUR CURTISS JAMES

PERCY R. PYNE
JOHN B. TREVOR

Class of 1911

CHARLES LANIER
ANSON W. HARD

WILLIAM ROCKEFELLER
GUSTAV E. KISSEL

Class of 1912

D. O. MILLS
ARCHIBALD ROGERS

ADRIAN ISELIN, JR.

ALBERT S. BICKMORE
CORNELIUS C. CUYLER

Class of 1913

GEORGE S. BOWDOIN
A. D. JUILLIARD

CLEVELAND H. DODGE
ARCHER M. HUNTINGTON

EXECUTIVE OFFICERS

Director
HERMON C. BUMPUS

Assistant-Secretary and Assistant-Treasurer
GEORGE H. SHERWOOD

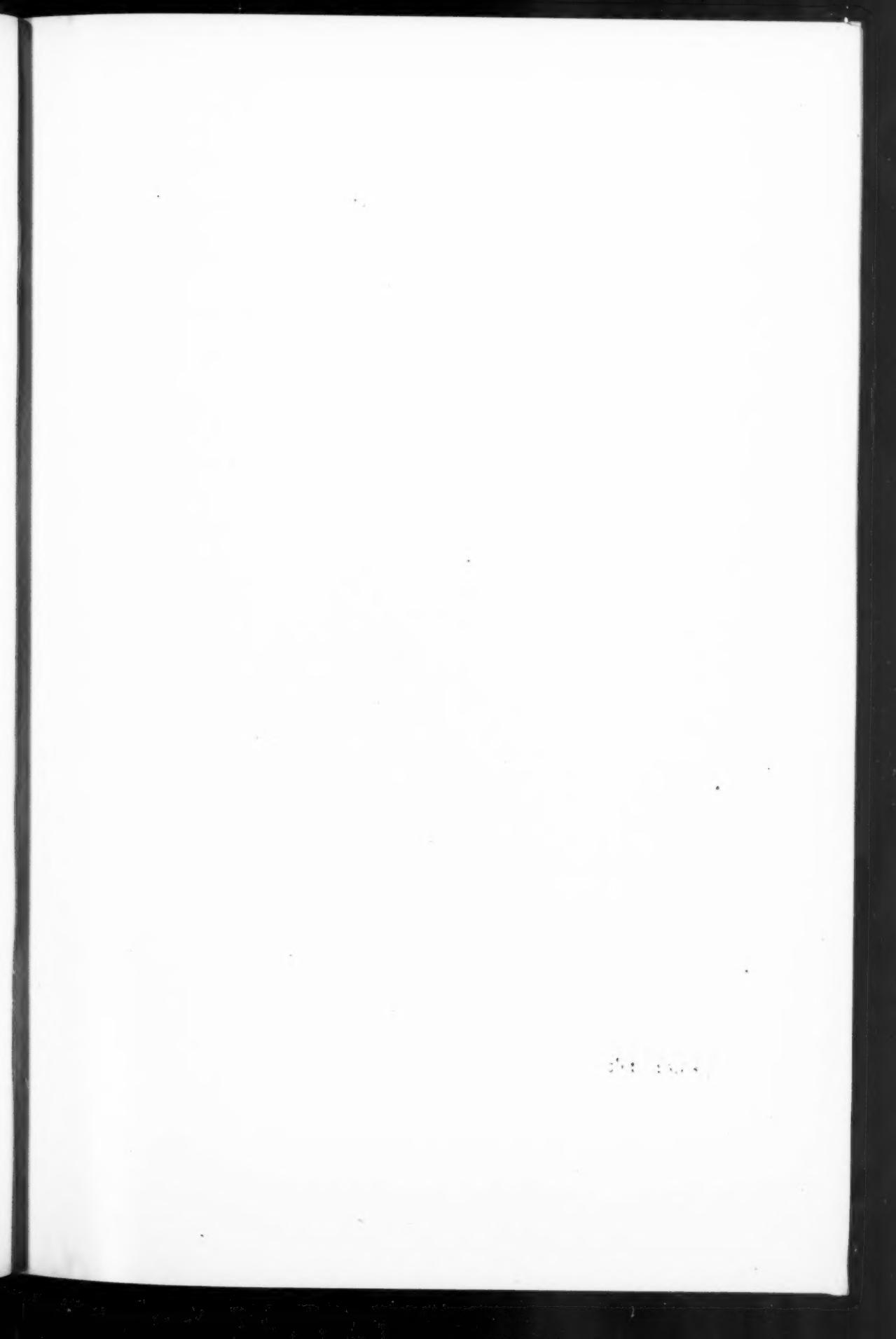
THE AMERICAN MUSEUM OF NATURAL HISTORY was established in 1869 to promote the Natural Sciences and to diffuse a general knowledge of them among the people, and it is in cordial coöperation with all similar institutions throughout the world. The Museum authorities are dependent upon private subscriptions and the dues from members for procuring needed additions to the collections and for carrying on explorations in America and other parts of the world.

The membership fees are,

Annual Members.....	\$ 10	Fellows.....	\$ 500
Life Members.....	100	Patrons.....	1000

All money received from membership fees is used for increasing the collections and for developing the educational work of the Museum.

The Museum is open free to the public on every day in the year.





THE
NEW
YORK
ACADEMY
OF
SCIENCES

THE MEMORIAL BUST OF CHARLES DARWIN.
Presented by the New York Academy of Sciences, February 12, 1909.

The American Museum Journal

VOL. IX

MARCH, 1909

No. 3

THE DARWIN CELEBRATION.

THE one hundredth anniversary of the birth of Charles Robert Darwin and the fiftieth anniversary of the publication of "The Origin of Species" were celebrated by the New York Academy of Sciences on February twelfth at the American Museum of Natural History. The occasion was made memorable by the unveiling of a bronze bust of Darwin, the Academy's gift to the Museum; also by the dedication of the Synoptic Hall of the Museum as "The Darwin Hall of Invertebrate Zoölogy," with the unveiling of bronze tablets thus inscribed at either side of the entrance from the Hall of Forestry. The bust was presented by the Academy's president, Charles Finney Cox, and was accepted on behalf of the trustees of the Museum by President Henry Fairfield Osborn.

The bust is pronounced by those who knew Darwin personally, and by his sons in England, who have seen photographs of the clay model, the best portrait in the round of the great naturalist ever made. It is the work of William Couper, sculptured from photographs taken when Darwin was fifty years old, at the time of the publication of "The Origin of Species." President Osborn's acceptance of the bust, as a valuable work of art and as an expression of appreciation by the New York Academy of both the technical and the directly educational work of the Museum, gives this impressive likeness of Darwin permanent place in the Darwin Hall of Invertebrate Zoölogy. Here it will stand to testify to Charles Darwin's method of scientific study, namely, a humble and direct approach to nature, in self-reliance and with independence of thinking. The speakers of the afternoon, representing Geology, Botany and Zoölogy, and each claiming Darwin as the inspiration to freedom of thought in the given science, were Professors John James Stevenson, Nathaniel Lord Britton and Hermon Carey Bumpus.

But a few years ago, even to consider the question of evolution was held to be irrational and immoral, not only by the world at large, but also by the intellectual world, with the exception of a small body of scientists.

The change has come since the appearance of "The Origin of Species" in 1859, and outside of the scientific centers at Philadelphia, Boston, Washington, New Haven and New York, it has seemed to come slowly; but the effect has been cumulative, and to-day thinkers in all lines accept the fact of evolution. In the first ten years after 1859, many of the older scientists ignored or fought the doctrine bitterly. Even Agassiz remained



FRONT VIEW OF DARWIN BUST.

on the side of the creation of each species as we find it. Asa Gray, however, who knew Darwin personally and who had published a review of "The Origin of Species" before a copy reached America, stood firmly not only for the theory of evolution, but also for that which Darwinism signifies, the theory of Natural Selection as the working process of evolu-

tion. He inspired the younger men in the Boston scientific center, Shaler, Verrill, Packard, Morse, Hyatt, Allen and Scudder, and through their influence enthusiasm for Darwinism grew until a climax was reached in 1876. Since that date every biological worker in the country has found his research an item to strengthen belief in evolution, and



PROFILE VIEW OF DARWIN BUST.

also, it is true, often to expose some weakness or mend some flaw in the doctrine of Natural Selection.

Darwin, however, did not consider his work faultless, final or complete. In his day the general theory of evolution was already well established in many scientists' minds, due to the work of anatomists such as Lamarck and Cuvier. Darwin marshalled the facts that the

world could then give, to formulate clearly and boldly a possible explanation of the method by which evolution had produced existing life forms. From the geometric increase in numbers due to the normal rate of reproduction of plants and animals, there resulted a struggle for existence, a three-fold struggle (1) with the environment, which not only brought the animal the ordinary exigencies of life, but also perhaps presented suddenly wholly new problems due to some geological change during the earth's history, (2) with members of the same species in search of homes and food and (3) with direct enemies. Since all forms vary at birth, some were less well fitted for the struggle than others; they died for lack of food or were killed by enemies; those better fitted survived. Thus the best fitted for life in a given region became the parents of the next generation, and, if the environmental conditions remained unchanged for many generations, heredity brought about a better adapted race, a "nature selected" race, and, what is the important and contested point, a new variety or species, that is, a race different from the ancestral one. Thus, according to Darwinism, new species come about through slow, minute and cumulative changes. One of the strongest pieces of work done since Darwin's time, that of Hugo de Vries, proves that species may come into existence abruptly also, by large changes or "mutations," de Vries holding that the mutation theory supplements Natural Selection but does not supplant it.

Whether, however, Darwinism lives in the future, or fails under the critical scrutiny of the army of working scientists and in the light of a vast aggregation of new facts, Darwin's position of eminence cannot be assailed. He stands for supreme service to mankind in that he forced into the world of organized knowledge love of truth and abhorrence of slavery to tradition. He was a great seer in a scientific world where practically all was new ground. He was a "naturalist," one of the few deserving the name, with masterly grasp of all known facts in the various branches of natural science. Since his time each of these branches, botany, zoölogy, geology, has grown until it seems that no one mind can comprehend the details of even one of them. The result is that to-day every man is working on his chosen problem, and often the field of that problem is extremely limited, though it involves weighty principles.

Will there come a second Darwin, again to grasp all nature in clear mental vision? His task would be the same as was Darwin's, though far more difficult because of the larger body of knowledge,—to accept

and organize all accumulated information, while at the same time holding his own opinions and formulating his own theories. The work of the new Darwin would marshall to the front or banish to oblivion the many tangled theories of the present, and all so clearly and convincingly that there would be forced upon him who reads a repetition of the effect of "The Origin of Species," the conviction that, after all, the task was an easy one, for there could be no other conclusion.

An important feature of the celebration is the special exhibition in the Hall of Forestry and the new Darwin Hall comprising carefully selected specimens and groups of specimens bearing upon the Darwinian theory of Evolution through Natural Selection; also a valuable collection of Darwiniana consisting of letters, writings and portraits of Charles Darwin, as well as a series of photographs of Darwin's contemporaries. The exhibition is open free to the public and will remain in place till March 12.

NEW HABITAT GROUPS OF NORTH AMERICAN BIRDS.

THE high degree of realism and artistic effect achieved in the installation of the Habitat Groups of North American Birds is unique in Museum exhibition. Begun in 1898 with the Bird Rock Group of the Gulf of St. Lawrence, and now nearing completion, the series has entailed a large amount of travel and study on the part of Mr. Frank M. Chapman, Curator of Ornithology, and invaluable assistance on the part of the Museum's taxidermists and artists.

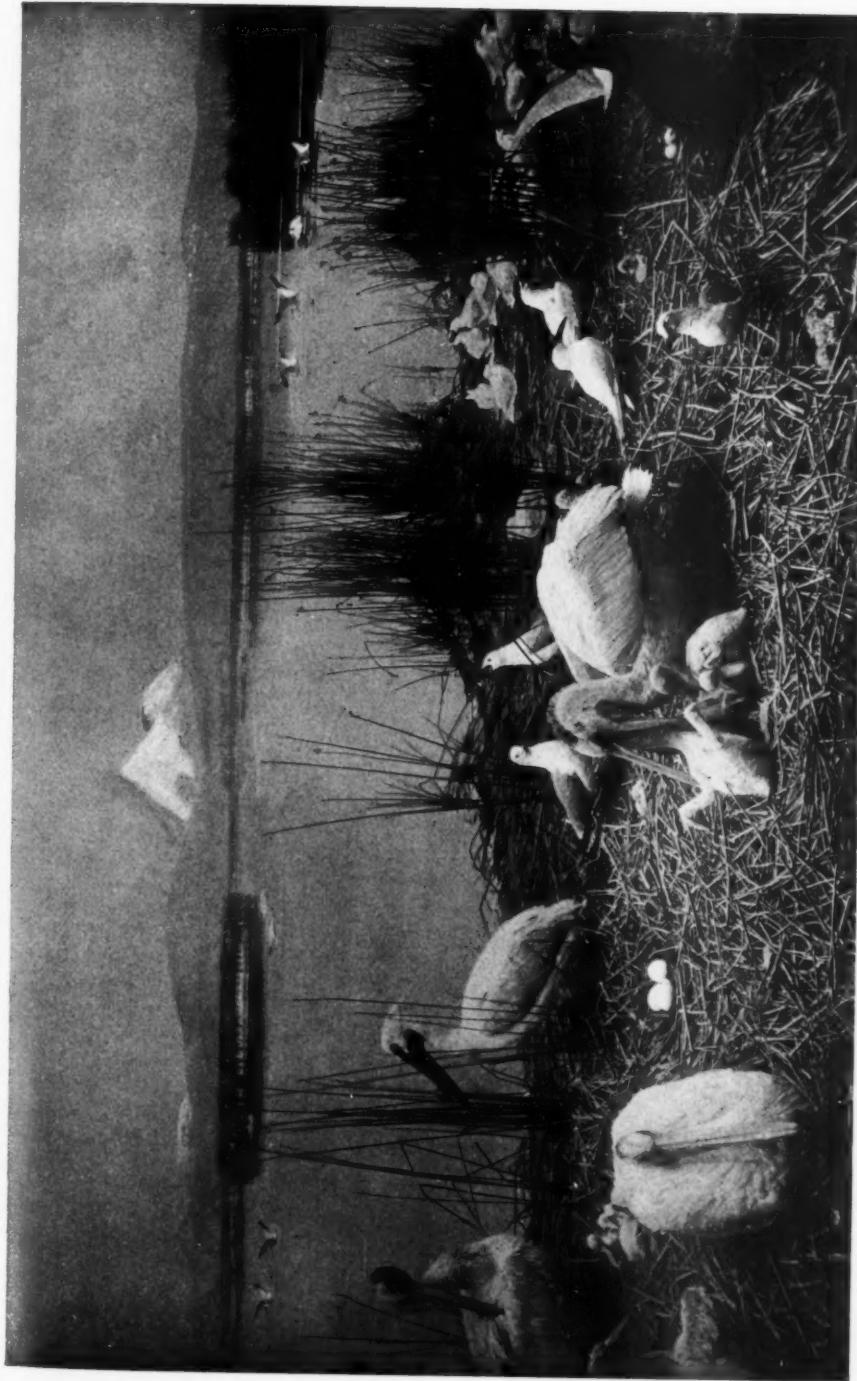
Conceive the ingenuity and labor involved in imitating, accurately as to locality, flawlessly as to workmanship, the snow or water, rocks and vegetation of from sixty to one hundred sixty square feet of a given region; then so to blend the real foreground with a painted background that, quite as in nature, the eye passes from the flowers and birds near at hand, to meadows that stretch to the horizon or to mountains and sky.

The east side of the Bird Group Hall has been previously opened to the public. The west side was opened formally to Members of the Museum on February 26 to mark the completion of six new groups, a demonstration of the method of construction being given by the Cuthbert Rookery Group, only partly finished at that time. On the following day the gallery was thrown open to the general public.

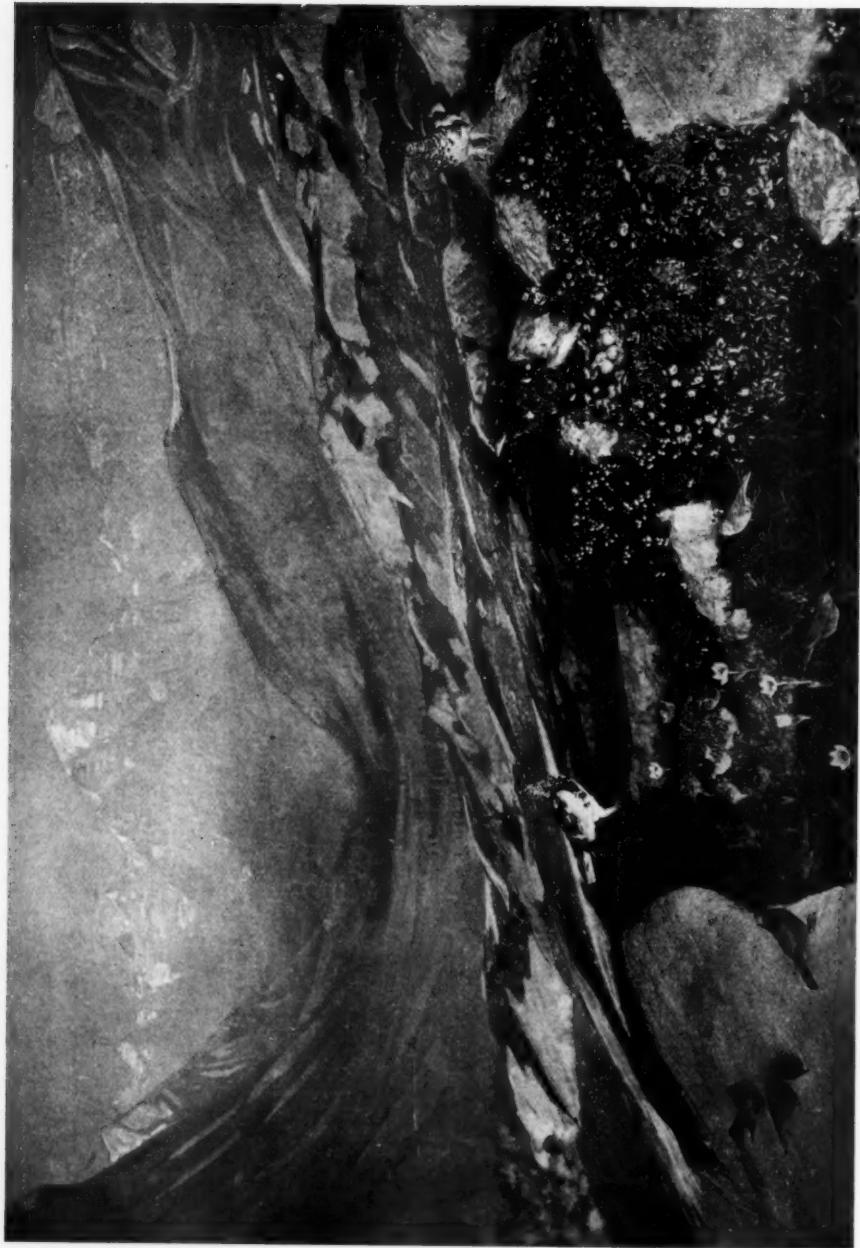


BOOBIES AND MAN-O-WAR BIRDS ON CAY VERDE.

Background by Bruce Horsfall. Birds by Herbert Lang.



A KLAMATH LAKE BIRD COLONY.
Background by Carlos Hittell. Birds by Herbert Lang.



60

ARCTIC-ALPINE BIRD-LIFE IN THE CANADIAN ROCKIES

Background by Carl Rungis from a sketch by L. A. Fuertes.

To view the scene of the first of these new groups we must make the long journey to the Bahamas and there search out Cay Verde. This is a small coral islet with no fresh water, and with the dark blue of great sea depths sharply separated from the light water of its shallow banks. The islet is of peculiar interest since it lies in the line of migration, and being the only landing place in a large expanse of water, receives calls from many migrating birds. Two species, the Booby and the Man o' War bird, nest there in large numbers in March, the Boobies on the ground, the Man o' War birds in the sea grape and prickly pear cactus of the islet. Boobies are particularly tame when on the nests. This is due in part to the fact that they have had no opportunity to learn fear of man, but in addition it probably results from the strength of their parental instinct, which so controls their fear that they do not leave their nests when an intruder walks among them and makes intimate acquaintance with family after family.

The male Man o' War bird is ornamented with a large throat-pouch of vivid red, which, inflated like a toy balloon, makes the bird conspicuous whatever its environment. This ornamentation, actually disadvantageous in the struggle for existence, furnishes an illustration for Darwin's Sexual Selection theory. To-day, all recognize the matter of ornamentation among animals as one of the most difficult of biological problems, whether tentatively accounting for it on this theory of the female's choice of the most attractive, or as a direct physiological and structural result of the male's excessive energy, or by yet other theories.

If we move to the second of the new groups, we are transported thousands of miles across the continent and north to the California-Oregon boundary line, where the shallow water of Klamath Lake contains many islands of rushes and is surrounded by treeless hills with Mt. Shasta in the distance. It is a picturesque place, but much of the region will be drained by a government reclamation project and converted into orchards and fields of alfalfa. The Klamath Lake group shows Cormorants and Gulls, also Caspian Terns; but interest centers in the White Pelicans, immense birds with wing expanse of from eight to nine feet. There are interesting studies of flying Pelicans, and in the foreground one young bird is illustrating its amusing method of fishing down its parent's throat. One adult shows the bill-knob of the nuptial season. It will be a matter of regret if the demands of civilization push this bird to extinction. Unlike many birds, to which advance in civilization

means merely more food and fewer enemies, the Pelican is too specialized for survival; it can adapt itself only to insular life and an abundance of fish. It must be saved through the creation of government reservations for the purpose. An important step toward the protection of western water-fowl was taken by President Roosevelt in August, 1908, when he set aside the Lower Klamath Lake and Lake Malheur Reservations.

The third group carries us to the Canadian Rockies at Ptarmigan Lakes. In the foreground are White-tailed Ptarmigans in mixed white and brown plumage, for it is the height of the Alpine Spring (July 15) and the birds' white plumage of Winter is giving place to the summer coat. A nest of five spotted eggs is set among gray rocks and lichens, only a few feet from the border of an unmelted snowfield, yet surrounded by the star-like flowers of *Dryas*, by heather in bloom and by anemones two inches across. One Ptarmigan is shown with six downy chicks in spirited attitudes. The apparent fragility but real endurance of this life is enhanced by what is to be seen on lifting the eyes from the ground, a circle of austere snow-covered mountain peaks and, far below, the ice and blue water of an opening lake.

The Ptarmigan is a boreal type. It is found as far south as New Mexico, but only at high altitudes, the species possibly having survived in these Arctic-Alpine regions when left stranded there by the retreating ice of the Glacial Period. Ptarmigans not only present one of the most striking cases of coloration like the environment of the season, nor only an instance of gradation of color from above downward to counteract the shadow gradation from below upward and produce the effect of unsubstantiality, but they also have correlated with this color protection, the instinct to remain motionless in the face of the enemy.

The fourth group, showing the Sage Grouse, keeps us in the West, descending from Alpine regions to the high sage-brush plains of Wyoming. The Sage Grouse is the largest of North American game birds with the exception of the Wild Turkey. The group illustrates some of the remarkable performances of the birds at the mating season.

The remaining two groups, representing the Western Grebe and the Wild Goose, show the rolling treeless plains of Western Canada, at Crane Lake, Saskatchewan. The Grebe group illustrates instincts such as always prove a lure afield to the bird student. One parent bird is swimming in stately fashion, while, peeping from the warm cradle between her back and wings, four eager and contented young birds are



SAGE GROUSE IN WYOMING.
Background by Carlos Hittell. Birds by Herbert Lang.



GREBES (UPPER FIGURE) AND WILD GOOSE (LOWER FIGURE) ON CRANE LAKE,
SASKATCHEWAN.

Backgrounds by Hobart Nichols. Birds by Herbert Lang.

taking a sail with her; another parent bird is covering her nest of eggs preparatory to leaving it; everywhere the birds swim with their long necks erect so that the perpendicular lines of black and white resemble the surrounding reeds and reflections. The Western Grebe is slaughtered mercilessly by plume hunters, the birds' snow-white breasts appearing in market in capes and muffs and on hats.

The Museum acknowledges its large indebtedness for this series of Bird Habitat Groups to the generosity of several of its members, but particularly to the following: Mr. John L. Cadwalader and to Mrs. Morris K. Jesup, Mrs. Philip Schuyler, Mrs. John B. Trevor, Mrs. Robert Winthrop, Mr. F. Augustus Schermerhorn, Mr. H. B. Hollins, Mr. Henry Clay Pierce, Mr. Henry W. Poor, Mr. Charles Lanier and Mr. Courtenay Brandreth.

THE ANNUAL MEETING OF THE TRUSTEES.

AT the Annual Meeting of the Board of Trustees of the Museum, held on Monday, February 8, the following officers were elected for the ensuing year: **HENRY FAIRFIELD OSBORN**, President; **J. PIERPONT MORGAN**, First Vice-President; **CLEVELAND H. DODGE**, Second Vice-President; **J. HAMPTON ROBB**, Secretary, and **CHARLES LANIER**, Treasurer. The following abstract of the president's annual report will be of interest to the Members.

In point of growth the past year has been the most notable in the history of the institution. Partly aided by the Jesup bequest, the total expenditures were \$275,419, or \$25,000 more than the previous year. Of this the city contributed \$159,930.62 and the Museum \$115,488.38. In the past eight years the Museum has expended directly \$932,008 on its explorations and collections. The estimated total value of the collections secured during this period by exploration, by purchase and by gift to the Museum is more than \$2,000,000. For every dollar which has been expended by the city, more than a dollar has been added to the enlargement of the collections.

The present endowment fund, including the bequest of the late President Jesup, is \$2,048,156.61. To keep pace with the very rapid growth of the city and the demands it is making for public scientific education, an endowment fund of \$5,000,000 is needed. In every

part of the world the advance of agriculture and commerce and the spread of fire arms is rendering more scarce the objects of natural history of all kinds, including the works of the primitive races of men. It is deemed vitally important to push the explorations of the Museum in all parts of the world, while it is still possible to secure these fast vanishing works of nature and of primitive man. During the year 1908 and at the present time the Museum's explorations extend to the Mackenzie River and the shores of Beaufort Sea, to Alaska, Vancouver, Alberta and Saskatchewan, the west coast of Hudson Bay and western Labrador; in the United States parties have been spread in Wyoming, Montana, Idaho, North Dakota, Nebraska, Colorado and Florida, also in Central America, and in the south to Nicaragua, the West Indies and Bahama Islands; in Asia special agents are working in Kashmir, China and Corea; among the islands of the Pacific the Museum is working in the Philippines, the Solomon Islands, Tahiti, New Zealand, the South Shetland Islands and Kerguelen Island.

Popular education has been given a stronger impulse than ever before. The Museum was open free to the public every day of the year and on 179 evenings. The gross attendance last year was 1,043,562, in large part due to the exceptional interest in the International Tuberculosis Exhibition. The attendance at public afternoon and evening lectures reached a total of 82,718. The number of children visiting the Museum in lecture classes was 10,325. The number of children who were especially guided through the Tuberculosis Exhibition and who listened to lectures on simple means of prevention of this disease was 41,627. These children came from all the high schools of Greater New York and from many distant towns and cities. In the schools of the city 575,801 children were reached by the system of the circulating nature study collections.

During the coming year the principal new exhibitions which will be developed are, in particular, the Children's Museum, the Museum for the Blind, the Philippine Exhibition and the Congo Exhibition presented by King Leopold of Belgium. The last is the most complete collection outside of that which is to be seen in the Congo Museum near Brussels. As a result of the Tuberculosis Exhibition immediate steps will be taken to make a special exhibition of the life and habits of the smaller organisms in relation to health and disease.

THE STEFÁNSSON-ANDERSON ARCTIC EXPEDITION.

ATE in February, a welcome letter was received from Mr. Vihljalmi Stefánsson, who, together with Dr. R. M. Anderson, was sent by the Museum last summer to make ethnological, geographical and biological studies along the arctic coast of North America in the vicinity of the mouth of the Mackenzie River. Mr. Stefánsson writes as follows:

"CAPE HALKETT, ALASKA, Sept. 25th, 1908.

"On my way east along the coast I have just come upon Capt. William Mogg's vessel, the "Olga," frozen in the ice off shore at Halkett. [Long. 152° W.] The captain will abandon his ship next Tuesday. * * * * *

"I have not my diary with me — it is at our camp on shore and I am at Capt. Mogg's ship three miles off shore in the ice — so I cannot give exact dates, but we left Point Barrow about August 29th or 30th. We had head winds and foggy weather and finally froze in [at] Smith Bay September 6th — very bad luck; some years boating is good till October 1st or after. We could do nothing but prepare safe caches on shore for our stuff until the ice was strong enough for sled travel September 18th, when we started east. We soon came to weaker ice, however, and had to delay and go slowly, so we are only this far by now, but hope for better traveling.

"Dr. Anderson I suppose to be safe either at Barter Island or inland from there, looking for deer and mountain sheep. I hope we shall be down to him in some 10 days from now. All we shall bring, however, is tobacco and matches, for we had only four dogs with us, and succeeded in making only an indifferent sled out of driftwood. If we fail in hunting and fishing to the eastward we shall probably — some of us at least — retreat upon our cache in Smith's Bay and be able to turn a penny trapping while we eat up the flour, etc. — for it is an excellent fox country, though there are no people, because there are no food animals.

"I expect I shall get to Herschel Island in time to write you by the police mail, and you should get the letter about as soon as this one, while I should be able to give in it more information as to ourselves. Seeing, however, that one of our whaleboats is frozen in so far west, I hope, among other things, that we can get together a good collection — perhaps several hundred skulls — of bones from the ancient graveyards along the sandspit between Point Tangent and Point Barrow. I saw over a hundred (on top the ground) in a walk through one of them when we were ashore in a calm coming east. We shall also almost certainly be able to do some good digging on the island just

east of the Colville Mouth from which I last year got a few specimens for the Peabody Museum, * * * * * As to getting to Prince Albert Land or Coronation Gulf, I think there is no reasonable doubt of it for next year — "barring accidents" and such unparalleled hard luck as everybody has had up here this year.

"Near Point Tangent a trading schooner passed us going east and I got them to take 27 sacks of flour and some other stuff for Dr. Anderson, but Capt. Mogg tells me she probably did not get within some 60 miles of Barter Island — certainly not farther than Flaxman and probably not so far. That will be well enough for us, for the nearer the Colville the better.

"I met the other day an Eskimo who used to live in the Colville. From him I got a map which should enable me to locate at least three families of the Colville group this winter — so the Colville plans are all right, so far, except their expensiveness, as previously confessed from Point Barrow. * * * * *

RECENT PURCHASES OF FOSSIL VERTEBRATES.

THE Department of Vertebrate Palaeontology has recently purchased from Mr. Charles H. Sternberg, the well known collector, a number of important fossils. Chief of these is a unique specimen — a "mummied" Dinosaur, as President Osborn has aptly called it. It is a nearly complete skeleton of the Trachodon or Duck-billed Dinosaur, in which not only the bones but also the greater part of the skin of the head, body and limbs is preserved intact. As found in a soft sandstone stratum near Lance Creek, Wyoming, the skeleton lay on its back, the head turned to one side, the fore limbs stretched out, the hind limbs doubled up close to the body. Over head, neck and limbs lies the thin curtain of skin, shrunk down tight upon the bones and sunken in over most of the body cavity below the ribs.

At first glance, the skin seems to have irregular rows of small spots over the surface, the spots being about the size of a half dollar or less. On closer examination, each spot is seen to be made up of a number of little polygonal plates, like the pieces of a mosaic, with innumerable smaller plates filling the interspaces between the spots. There are no overlapping scales such as cover most modern reptiles, nor anything like the smooth or hairy skin of mammals or the feathered skin of birds. The dinosaur skin is *sui generis*, — completely unlike that of any modern

animal. A part of the tail of the same species, now on exhibition in the Dinosaur Hall, shows a considerable area of skin, much like that of this skeleton, but with larger plates and no distinct pattern of spots. Traces of the skin are preserved in several other kinds of extinct reptiles, but nothing has been found that compares with this in its perfect preservation.

To all appearances, the animal must have died on some dry, sandy spot exposed to the sun, so that the carcass dried and shrank to a natural mummy. Then it must have been suddenly buried by a flood of sand from a freshet, so rapidly and deeply that the skin had no chance to soften and decay, but was preserved and petrified with the bones. This occurred three million years ago, on a moderate estimate of geologic time. We think of the mummies of Egypt, three or four thousand years old, as being of respectable antiquity. Still more venerable are the mammoths which have been found buried in the frozen tundras of Siberia and Alaska, and their outward appearance thus preserved to our day. But even the mammoths, tens of thousands of years old though they be, are mere creatures of yesterday, modern upstarts, compared with the hoary antiquity of this dinosaur mummy.

It will be a matter of several months' work to complete the preparation of this specimen for public exhibition, but, when finished, it will do more than any mere skeleton or pictured restoration to impress upon us the reality of the ancient world of the Dinosaurs.

Two other specimens purchased from Mr. Sternberg are marine reptiles from the Kansas chalk beds, a little older than the formation in which the Trachodon was found. One is a skeleton of the marine turtle *Toxochelys*, the other a fine skull of the Mosasaurian or swimming lizard *Clidastes*. There are also two specimens of comparatively recent geological age, one a fine skull of the extinct long-horned bison, six feet from tip to tip of the horns, and a lower jaw of the Imperial Mammoth,—both from the Pleistocene of Kansas. Two huge tortoises from the Miocene beds of Kansas and the skull of a small rodent related to the beaver, but of burrowing habit, are likewise included in the collection.

Mr. Sternberg is a genuine enthusiast in searching for these memorials of the former history of the world we live in, and it is a satisfaction no less to himself than to the American Museum to see these fine specimens placed where they will be seen and appreciated by thousands of visitors each year. He has already contributed to our collection some notable specimens and many fossils of much scientific interest. M.

MUSEUM NEWS NOTES.

THE following members have been elected since the last issue of the Journal: Patron, MR. W. K. VANDERBILT; Life Members, MESSRS. NORMAN B. REAM, JOHN S. KENNEDY, ALEXANDER WALKER and JOHN J. WILLIAMS and Mrs. E. A. SLAVEN; Annual Members, MESSRS. FITZ ROY CARRINGTON, EDWIN PARSONS, PERCY R. PYNE, 2d, RICHARD SUTRO, D. S. RAMSAY, F. S. SMITHERS, ALFRED G. VANDERBILT, GEORGE HAMILTON DEAN, WILLIAM T. HILLES, CHARLES E. SEITZ, A. H. WRAY, ADOLPH RIESENBERG, L. WILLIAM HORR, JAMES I. BARR, WILLIAM B. HORNBLOWER and CHARLES E. PARSONS, DOCTORS HERMANN M. BIGGS and EDGAR S. BARNEY, HON. HUGH J. GRANT and MMES. C. C. AUCHINCLOSS, THOMAS KIRKPATRICK, HELEN C. ROBBINS and J. A. VANDERPOEL.

THE Museum is preparing a Philippine Exhibit for the United States War Department. It is intended to cover the ethnology of the Islands and also to give especial attention to Philippine agricultural and industrial conditions since 1898, the date of American occupation. The exhibit will be set up at the Museum and then forwarded to Seattle, where it is to be displayed at the Alaska-Yukon-Pacific Exposition.

PROFESSOR AARON L. TREADWELL, of Vassar College, has been appointed Honorary Curator of Annulates.

SCIENTIFIC PUBLICATIONS IN 1908.

THE scientific publications of the Museum in 1908 comprised Volume XXIV and Volume XXV, Part I, of the BULLETIN, Volume X, Part II, and Volume XIV, Part II, of the MEMOIRS and Volume I, Parts IV, V and VI and Volume II, Part I of the new series of ANTHROPOLOGICAL PAPERS.

The articles contained in these various publications are technical in character, but many of them have general as well as scientific interest, and their titles are given in the following list. They indicate in part, the scope of the activity of the Museum staff in research in several departments of natural science. The articles are published separately and, like the complete volume, may be obtained from the librarian except as indicated.

THE BULLETIN, VOLUME XXIV.

(Thirty-three plates and 167 text figures.)

	PAGE
ART. I.—A List of the Genera and Subgenera of North American Birds, with their Types, According to Article 30 of the International Code of Zoological Nomenclature. By J. A. ALLEN	1
ART. II.—Notes and Observations on Carboniferous Fossils and Semifossil Shells, Brought Home by Members of the Peary Expedition of 1905–1906. By R. P. WHITFIELD. (Plates I–IV.)	51
ART. III.—Fossil Insects from Florissant, Colorado. By T. D. A. COCKERELL. (Plate V.)	59
ART. IV.—The Fossil Flora of Florissant, Colorado. By T. D. A. COCKERELL. (Plates VI–X.)	71
ART. V.—Pennant's "Indian Zoölogy." By J. A. ALLEN	111
ART. VI.—The Ants of Porto Rico and the Virgin Islands. By WILLIAM MORTON WHEELER. (Plates XI–XII.)	117
ART. VII.—The Ants of Jamaica. By WILLIAM MORTON WHEELER	159
ART. VIII.—Ants from Moorea, Society Islands. By WILLIAM MORTON WHEELER	165
ART. IX.—Ants from the Azores. By WILLIAM MORTON WHEELER	169
ART. X.—Notes upon the External and Internal Anatomy of <i>Balaena glacialis</i> Bonn. By ROY C. ANDREWS. (Six text figures.)	171
ART. XI.—A Four-horned Pelycosaурian from the Permian of Texas. By W. D. MATTHEW. (One text figure.)	183
ART. XII.—The Ankylosauridae, a New Family of Armored Dinosaurs from the Upper Cretaceous. By BARNUM BROWN. (Twenty text figures.)	187
ART. XIII.—Description of a New Species of <i>Mesoplodon</i> from Canterbury Province, New Zealand. By ROY C. ANDREWS. (Plate XIII, and five text figures.)	203
ART. XIV.—Notes on Two Porpoises Captured on a Voyage into the Pacific Ocean. By JOHN TREADWELL NICHOLS. (Plate XIV, and three text figures.)	217
ART. XV.—A Revision of the American Eocene Horses. By WALTER GRANGER. (Plates XV–XVIII, and five text figures.)	221
ART. XVI.—New Fossil Mammals from the Fayûm Oligocene, Egypt. By HENRY FAIRFIELD OSBORN. (Six text figures.)	265
ART. XVII.—Two Fossil Phoridae from the Miocene Shales of Florissant, Colorado. By CHARLES T. BRUES. (Two text figures.)	273
ART. XVIII.—The North Atlantic Right Whale and its near Allies. By J. A. ALLEN. (Plates XIX–XXIV, and one text figure.)	277
ART. XIX.—A Review of the Manakins of the Genus <i>Chiroxiphia</i> . By W. DEWITT MILLER. (Plate XXV, colored.)	331
ART. XX.—Honey Ants, with a Revision of the American <i>Myrmecocysti</i> . By WILLIAM MORTON WHEELER. (Twenty-eight text figures.)	345
ART. XXI.—The Ants of Texas, New Mexico and Arizona. By WILLIAM MORTON WHEELER. (Plates XXVI–XXVII.)	399

	PAGE
ART. XXII.— The Peary Caribou (<i>Rangifer pearyi</i> Allen). By J. A. ALLEN. (Twelve text figures.)	487
ART. XXIII.— Notes on <i>Solenodon paradoxus</i> Brandt. By J. A. ALLEN. (Plates XXVIII—XXXIII, and nine text figures.)	505
ART. XXIV.— A Fossil Larrid Wasp. By S. A. ROHWER	519
ART. XXV.— On the Tenthredinoidea of the Florissant Shales. By S. A. ROHWER. (One text figure.)	521
ART. XXVI.— Notes on the Skull of <i>Lysorophus tricarinatus</i> Cope. By E. C. CASE. (Four text figures.)	531
ART. XXVII.— Osteology of <i>Blastomeryx</i> and Phylogeny of the American Cervidae. By W. D. MATTHEW. (Fifteen text figures.)	535
ART. XXVIII.— Myriopoda from Porto Rico and Culebra. By FILIPPO SIL- VESTRI. (Eleven text figures.)	563
ART. XXIX.— Mammalogical Notes.— I—VI. By J. A. ALLEN. (Four text figures.)	579
ART. XXX.— The Tertiary Tenthredinoidea of the Expedition of 1908 to Florissant, Colo. By S. A. ROHWER. (One text figure.)	591
ART. XXXI.— A Fossil Mellinid Wasp. By S. A. ROHWER	597
ART. XXXII.— New or Little Known Titanotheres from the Eocene and Oligocene. By HENRY FAIRFIELD OSBORN. (Twenty- one text figures.)	599
ART. XXXIII.— The Ants of Casco Bay, with Observations on two Races of <i>Formica sanguinea</i> Latreille. By WILLIAM MORTON WHEELER	619
ART. XXXIV.— Mammals from Nicaragua. By J. A. ALLEN. (Twelve text figures.)	647

THE BULLETIN, VOLUME XXV.

Catalogue of the Type and Figured Specimens of Fossil Vertebrates in the
American Museum of Natural History.

PART I.— Fishes. By L. HUSSAKOF. (Plates I—VI, and 49 text figures.)	1—103
----------------------------------------------------------------------	-------

ANTHROPOLOGICAL PAPERS, VOLUME I.

PART IV.— Ethnology of the Gros Ventre. By A. L. KROEBER. (Plates VIII—XIII, and 44 text figures.)	141
PART V.— The Hard Palate in Normal and Feeble-minded Individuals. By WALTER CHANNING and CLARK WISSLER. (Plates XIV— XXII, 8 text figures and 19 tables)	283
PART VI.— Iroquois Silverwork. By M. R. HARRINGTON. (Plates XXIII—XXIX, and 2 text figures.)	351

ANTHROPOLOGICAL PAPERS, VOLUME II.

PART I.— Mythology of the Blackfoot Indians. By CLARK WISSLER and D. C. DUVAL	1—164
----------------------------------------------------------------------------------	-------

MEMOIRS, VOLUME X.

PART II.— Material Culture and Social Organization of the Koryak. By
W. JOCHELSON. (Plates xiv–xl, and 194 text figures.) . 383–811

MEMOIRS, VOLUME XIV.

PART II.— Haida Texts. By JOHN R. SWANTON 271–802

LECTURE ANNOUNCEMENTS.

MEMBER'S COURSE.

THURSDAY evenings at 8:15 o'clock. Doors open at 7:45 P. M.

The second course of illustrated lectures for the season 1908–1909 to Members of the Museum and persons holding complimentary tickets given them by Members will be given in March and April according to the following programme:

March 4.— “Birds in Their Relation to Man.” By MR. FRANK M. CHAPMAN, Curator of Ornithology in the American Museum of Natural History.

What the Bird does for the State. The bird and the forester; the bird and the fruit-grower; the bird and the farmer; the bird and the citizen; the bird and the nature-lover.

What the State does for the Bird. Bird destruction for pleasure and for profit; influence of increasing population on bird-life.

What the State should do for the Bird. Bird conservation by law and by creating favorable environmental conditions.

March 11.— “The Conservation of Our Rivers and Lakes.” By MR. CHARLES H. TOWNSEND, Director of the New York Aquarium.

Mr. Townsend will speak on the importance of our fresh waters for fisheries, town water supply, water power, irrigation, navigation and recreation; the dangers which threaten them on account of pollution and deforestation; the remedies which may be applied through sewage disposal, fish culture, impounding of waters, protection of the watersheds and the development of navigable waterways.

March 18.— “The Conservation of Natural Scenery in America.” By MR. J. HORACE MCFARLAND, President of the American Civic Association for a Better and More Beautiful America.

The address will deal with the value of natural scenery in its effect on the human mind, and with the danger of inconsiderately destroying natural beauty in that

change of scenery which comes about from exploitation of our American resources. Mr. McFarland will speak of the Grand Canyon of Arizona, of the Yosemite National Park, of the Falls of Niagara, of the Panama Canal, and of other development and conservation in which we have paid no attention to the beauty of our natural scenery.

March 25.—“Conservation from the Palisades to the Adirondacks.” By
**MR. EDWARD HAGAMAN HALL, Secretary of the American
 Scenic and Historic Preservation Society.**

According to the old style of reckoning, March 25, 1909, will be the 300th Anniversary of the departure of Henry Hudson from Amsterdam on the voyage which brought him to the Hudson River. This fact gives especial propriety to the subject of conservation of the natural resources and landscape beauties of the famous river which rises in the Adirondacks and flows past the Palisades to the sea.

**April 1.—“The Passing of Our Great Wild Animals and Means taken to
 Restore Them.”** By **DR. WILLIAM T. HORNADAY, Director
 of the New York Zoölogical Park.**

Dr. Hornaday is in touch with the majority of the game regions of the world, and for thirty years has carefully watched the decrease of wild life. He will point out that everywhere the larger mammals are being killed much more rapidly than they breed, and that to-day the only hope for the preservation of many important species is absolute protection in game preserves. A few illustrations will be shown of an ideal game preserve very recently created in British Columbia for the sheep, goat, elk, mule-deer and grizzly bear.

PUPILS' COURSE.

THESE illustrated lectures are open to the pupils of the public schools when accompanied by their teachers and to the children of Members of the Museum on the presentation of Membership tickets.

Lectures begin at 4 P. M.

Mch. Mch.

Monday, 8 29.—“New York City in Colonial Days.” By **R. W. MINER.**

Wednesday, 10 31.—“Japan and Her People.” By **LOUIS HUSSAKOF.**
 Apr.

Friday, 12 16.—“The Panama Canal.” By **E. O. HOVEY.**

Monday, 15 19.—“Famous Rivers of the World.” By **WALTER GRANGER.**

Wednesday, 17 21.—“Natural Wonders of Our Country.” By **R. W. MINER.**

Friday, 19 23.—“American Forests and their Uses.” By **G. H. SHERWOOD.**

Monday, 22 26.—“Mediterranean Countries, Ancient and Modern.”
 “By **WALTER GRANGER.**

Wednesday, 24 28.—“The American Indian of To-day.” By H. I. SMITH.

Friday, 26 30.—“Travels in the Western States.” By BARNUM BROWN.

LECTURES ON BIOLOGY.

ARRANGED by the Biology Departments of the Normal College and the High Schools of Manhattan. Illustrated with stereopticon views.

Thursday afternoons at 3:30 o'clock.

Two lectures remain to be given.

March 18.—“Public Health.” By DR. THOMAS M. DARLINGTON.

April 15.—“Natural History of Animals.” By DR. HENRY E. CRAMPTON.

PEOPLE'S COURSE.

GIVEN in coöperation with the City Department of Education.

Tuesday evenings at 8 o'clock. Doors open at 7:30.

Three lectures by PROFESSOR A. D. F. HAMLIN of Columbia University on “The Architecture of Great Cities.” Illustrated with stereopticon views.

March 2.—“Rome.”

March 9.—“Constantinople.”

March 16.—“Venice.”

March 23.—“History of Architecture as seen in New York Buildings.”
By MR. JOSEPH M. TILDEN.

Three lectures by PROFESSOR A. D. F. HAMLIN on “The Architecture of Great Cities.” Illustrated with stereopticon views.

March 30.—“Paris.”

April 6.—“London.”

April 13.—“New York.”

April 20.—“Florence.” By MR. FRANCIS M. STRICKLAND.

April 27.—“Berlin.” By Mr. HENRY ZICK.

Saturday evenings at 8 o'clock. Doors open at 7:30.

March 6, 13, 20 and 27.—A course of four lectures by MR. O. F. LEWIS on “Modern Methods of Charitable Help.”

April 3.—“Child Labor.” By MR. OWEN LOVEJOY.

April 10.—“The Children's Court.” By MR. E. K. COULTER.

April 17.—Subject and lecturer to be announced.

April 24.—“The City Beautiful.” By MR. A. A. STOUGHTON.

Children are not admitted to the lectures of the People's Course, except on presentation of a Museum Member's Card.

MEETINGS OF SOCIETIES.

Public meetings of the New York Academy of Sciences and its Affiliated Societies are held at the Museum according to the following schedule:

On Monday evenings, The New York Academy of Sciences:

First Mondays, Section of Geology and Mineralogy.

Second Mondays, Section of Biology.

Third Mondays, Section of Astronomy, Physics and Chemistry.

Fourth Mondays, Section of Anthropology and Psychology.

On Tuesday evenings, as announced:

The Linnaean Society of New York, The New York Entomological Society and the Torrey Botanical Club.

On Wednesday evenings, as announced:

The New York Mineralogical Club.

On Friday evenings, as announced:

The New York Microscopical Society.

The programmes of the meetings of the respective organizations are published in the weekly *Bulletin* of the New York Academy of Sciences and sent to the members of the several societies. Members of the Museum on making request of the Director will be provided with the *Bulletin* as issued.

The American Museum Journal

EDMUND OTIS HOVEY, *Editor.*

FRANK M. CHAPMAN,
LOUIS P. GRATACAP,
WILLIAM K. GREGORY, *Advisory Board.*

Subscription, One Dollar per year. Fifteen Cents per copy.

A subscription to the JOURNAL is included in the membership fees of all classes of Members of the Museum.

Subscriptions should be addressed to The American Museum Journal, 30 Boylston St., Cambridge, Mass., or 77th St. and Central Park West, New York City.

Entered as second-class matter January 12, 1907, at the Post-office at Boston, Mass.
Act of Congress, July 16, 1894.

Guide Leaflets published by the
AMERICAN MUSEUM OF NATURAL HISTORY.

For Sale at the Museum.

(Issued as supplements to *The American Museum Journal*.)

- No. 1.—THE BIRD ROCK GROUP. By F. M. CHAPMAN, Associate Curator of Mammalogy and Ornithology. October, 1901. *10 cents.*
- No. 2.—THE SAGINAW VALLEY COLLECTION. By H. I. SMITH, Assistant Curator of Archaeology. December, 1901. *10 cents.*
- No. 3.—THE HALL OF FOSSIL VERTEBRATES. By W. D. MATTHEW, Ph. D., Assistant Curator of Vertebrate Palaeontology. January, 1902. *Out of print.*
- No. 4.—THE COLLECTION OF MINERALS. By LOUIS P. GRATACAP, A. M., Curator of Mineralogy. February, 1902. *Revised edition*, May, 1904. *Price, 10 cents.*
- No. 5.—NORTH AMERICAN RUMINANTS. By J. A. ALLEN, Ph. D. Curator of Mammalogy and Ornithology. March, 1902. *Revised edition*, February, 1904. *Price, 10 cents.*
- No. 6.—THE ANCIENT BASKET MAKERS OF SOUTHEASTERN UTAH. By GEORGE H. PEPPER, Assistant in Anthropology. April, 1902. *Price, 10 cents.*
- No. 7.—THE BUTTERFLIES OF THE VICINITY OF NEW YORK CITY. By WILLIAM BEUTENMÜLLER, Curator of Entomology. May, 1902. *Price, 15 cents.*
- No. 8.—THE SEQUOIA. A Historical Review of Biological Science. By GEORGE H. SHERWOOD, A. M., Assistant Curator. November, 1902. *Price, 10 cents.*
- No. 9.—THE EVOLUTION OF THE HORSE. By W. D. MATTHEW, Ph. D., Associate Curator of Vertebrate Palaeontology. January, 1903. *Second edition*, May, 1905. *Price, 10 cents.*
- No. 10.—THE HAWK-MOTHS OF THE VICINITY OF NEW YORK CITY. By WILLIAM BEUTENMÜLLER, Curator of Entomology. February, 1903. *Price, 10 cents.*
- No. 11.—THE MUSICAL INSTRUMENTS OF THE INCAS. By C. W. MEAD, Assistant in Archaeology. July, 1903. *Price, 10 cents.*
- No. 12.—THE COLLECTION OF FOSSIL VERTEBRATES. By W. D. MATTHEW, Ph. D., Associate Curator of Vertebrate Palaeontology. October, 1903. *Price, 10 cents.*
- No. 13.—A GENERAL GUIDE TO THE AMERICAN MUSEUM OF NATURAL HISTORY. January, 1904. *Out of print.*
- No. 14.—BIRDS' NESTS AND EGGS. By FRANK M. CHAPMAN, Associate Curator of Mammalogy and Ornithology. April, 1904. *Reprinted*, February, 1905. *Price, 10 cents.*
- No. 15.—PRIMITIVE ART. July, 1904. *Price, 15 cents.*
- No. 16.—THE INSECT-GALLS OF THE VICINITY OF NEW YORK CITY. By WILLIAM BEUTENMÜLLER, Curator of Entomology. October, 1904. *Price, 15 cents.*

(Reprinted from *The American Museum Journal*.)

No. 17.—THE FOSSIL CARNIVORES, MARSUPIALS AND SMALL MAMMALS IN THE AMERICAN MUSEUM OF NATURAL HISTORY. By W. D. MATTHEW, Ph. D., Associate Curator of Vertebrate Palaeontology. January, 1905. *Price, 15 cents.*

No. 18.—THE MOUNTED SKELETON OF BRONTOSAURUS. By W. D. MATTHEW, Ph. D., Associate Curator of Vertebrate Palaeontology. April, 1905. *Out of print.*

No. 19.—THE REPTILES OF THE VICINITY OF NEW YORK CITY. By RAYMOND L. DITMARS, Curator of Reptiles, New York Zoölogical Park. July, 1905. *Price, 15 cents.*

No. 20.—THE BATRACHIANS OF THE VICINITY OF NEW YORK CITY. By RAYMOND L. DITMARS, Curator of Reptiles, New York Zoölogical Park. October, 1905. *Price, 15 cents.*

No. 21.—THE DEVELOPMENT OF A MOLLUSK. By B. E. DAHLGREN, D. M. D. January, 1906. *Price, 10 cents.*

No. 22.—THE BIRDS OF THE VICINITY OF NEW YORK CITY. By FRANK M. CHAPMAN, Associate Curator of Mammalogy and Ornithology. April-July, 1906. *Price, 15 cents.*

No. 23.—THE SPONGE ALCOVE. By ROY W. MINER, Assistant Curator of Invertebrate Zoölogy. October, 1906. *Price, 10 cents.*

(Published as a separate series.)

No. 24.—PERUVIAN MUMMIES. By CHARLES W. MEAD, Department of Ethnology. March, 1907. *Price, 10 cents.*

No. 25.—PIONEERS OF AMERICAN SCIENCE. Memorials of the naturalists whose busts are in the Foyer of the Museum. April, 1907. *Price, 15 cents.*

No. 26.—THE METEORITES IN THE FOYER OF THE AMERICAN MUSEUM OF NATURAL HISTORY. By EDMUND OTIS HOVEY, Ph.D., Associate Curator of Geology. December, 1907. *Price 10 cents.*

No. 27.—THE MALARIA MOSQUITO. By B. E. DAHLGREN, D. M. D. Assistant Curator of Invertebrate Zoölogy. April, 1908. *Price, 15 cents.*

No. 28.—THE HABITAT GROUPS OF NORTH AMERICAN BIRDS. By FRANK M. CHAPMAN, Curator of Ornithology. February, 1909. *Price, 15 cents.*

Scientific Staff.

DIRECTOR.

HERMON C. BUMPUS, Ph.D., Sc. D.

DEPARTMENT OF PUBLIC INSTRUCTION.

Prof. ALBERT S. BICKMORE, B.S., Ph.D., LL.D., Curator Emeritus.
GEORGE H. SHERWOOD, A.B., A.M., Curator.

DEPARTMENT OF GEOLOGY AND INVERTEBRATE PALÆONTOLOGY.

Prof. R. P. WHITFIELD, A.M., Curator.
EDMUND OTIS HOVEY, A.B., Ph.D., Associate Curator.

DEPARTMENT OF MAMMALOGY AND ORNITHOLOGY.

Prof. J. A. ALLEN, Ph.D., Curator.
FRANK M. CHAPMAN, Curator of Ornithology.

DEPARTMENT OF VERTEBRATE PALÆONTOLOGY.

Prof. HENRY FAIRFIELD OSBORN, A.B., Sc.D., LL.D., D.Sc., Curator.
W. D. MATTHEW, Ph.B., A.B., A.M., Ph.D., Associate Curator.
WALTER GRANGER, Assistant.
BARNUM BROWN, A.B., Assistant

DEPARTMENT OF ICHTHYOLOGY AND HERPETOLOGY.

Prof. BASHFORD DEAN, A.B., A.M., Ph.D., Curator of Fishes and Reptiles.
LOUIS HUSSAKOFF, B.S., Ph.D., Assistant Curator of Fossil Fishes.

DEPARTMENT OF ANTHROPOLOGY.

CLARK WISSLER, A.B., A.M., Ph.D., Curator.
HARLAN I. SMITH, Assistant Curator.
ROBERT H. LOWIE, A.B., Ph.D., Assistant Curator.
CHARLES W. MEAD, Assistant.

Prof. MARSHALL H. SAVILLE, Honorary Curator of Mexican Archaeology.

DEPARTMENTS OF MINERALOGY AND CONCHOLOGY.

L. P. GRATACAP, Ph.B., A.B., A.M., Curator.
GEORGE F. KUNZ, A.M., Ph.D., Honorary Curator of Gems.

DEPARTMENT OF BOOKS AND PUBLICATIONS.

Prof. RALPH W. TOWER, A.B., A.M., Ph.D., Curator.

DEPARTMENT OF INVERTEBRATE ZOÖLOGY.

Prof. HENRY E. CRAMPTON, A.B., Ph.D., Curator.
ROY W. MINER, A.B., Assistant Curator.
FRANK E. LUTZ, A.B., Ph.D., Assistant Curator.

WILLIAM BEUTENMÜLLER, Associate Curator of Lepidoptera.

Prof. WILLIAM MORTON WHEELER, Ph.D., Honorary Curator of Social Insects.
ALEXANDER PETRUNKEVITCH, Ph.D., Honorary Curator of Arachnida.
PROF. AARON L. TREADWELL, B.S., M.S., Ph.D., Honorary Curator of Annulates.

DEPARTMENT OF PHYSIOLOGY.

Prof. RALPH W. TOWER, A.B., A.M., Ph.D., Curator.

DEPARTMENT OF MAPS AND CHARTS.

A. WOODWARD, Ph.D., Curator.

10.
A

THE AMERICAN MUSEUM
OF
NATURAL HISTORY

FOR THE PEOPLE
FOR EDUCATION
FOR SCIENCE